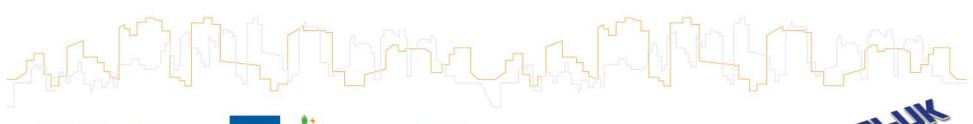




## Lean on the A23 Handcross to Warninglid

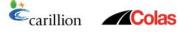
Darren Ruane, Carillion



















## Use of Collaborative Planning & Production Control on the A23































#### **Collaborative Planning**

- Create an agreed medium to long term plan
- Develop team working to agreed project goals
- Cross team understanding of other's constraints & drivers
- Builds collaborative working
- Allows the team to work together in a proactive and productive way















#### **All The Right People**







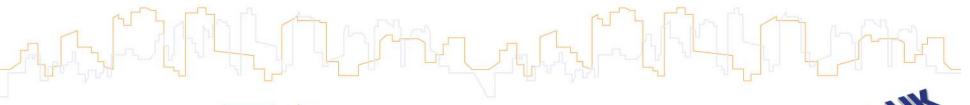
















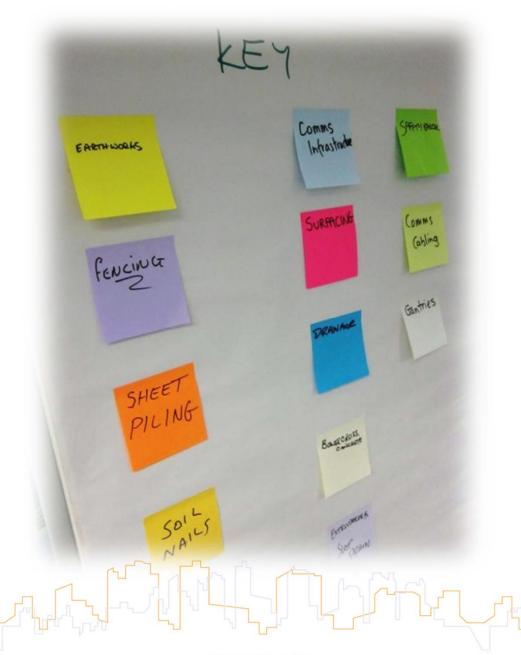












## **Identify all the** parties involved

Allocate Coloured Post-its













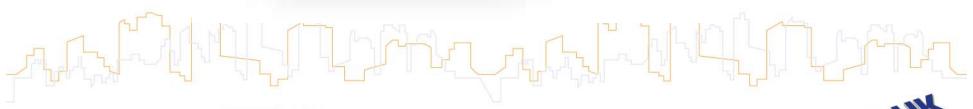


## Describe the activity

#### Describe the location

Required Resource e.g. Gang 2

Or Night shift









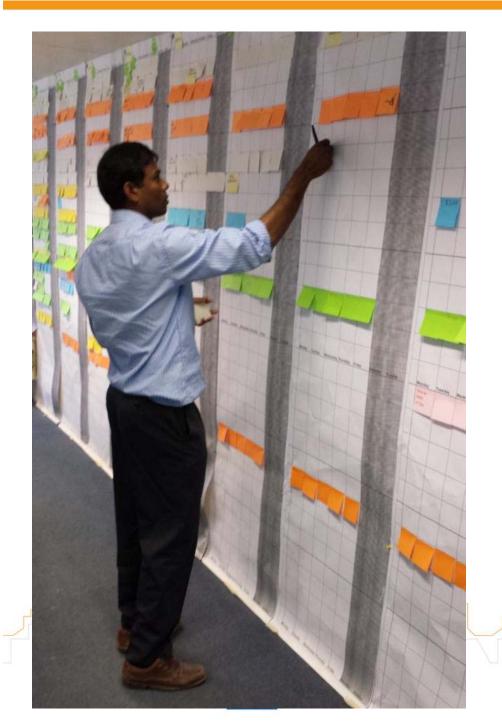












# Put ALL Potential Tasks on the Sheets

Even if you are unsure of duration or timing









# Break Down Individual Tasks with Long Durations

LEI-UK



#### **Discuss Possible Clashes**















## & Challenge Each Other













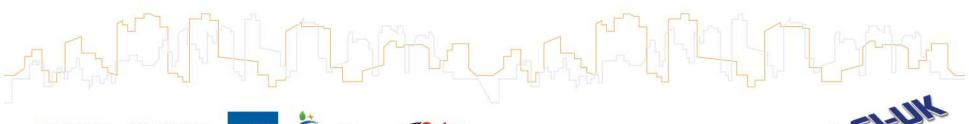




## **Collaborative Planning**



- Review it
- Identify issues and constraints
- Challenge it, Control & Protect it
- Agree it















## Lean Infrastructure Meeting the challenges of Construction 2025

#### **Collaborative Planning Outputs**

Planning	orative Meeting: -2013	KEY	Cartteen	Hole Meeters	Mydra- Capesia	Forest	Malays		Satirle	Lymban	Sintegrice Mouched															Page	1 of 3
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Monday	Toesday	Wednesday	Thursday	Friday	Selunday	Sundry	Munday	Tuesday	Wednesday	Thursday	Priday	Salurday	Bunday	Monday	Tuesday	Wednesday	Thursday	Phlay	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	FRitz	Seturday	Sunday
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							BACK BLINDING BP 1 BDB COMPLETS	BACK BUNDING RP COMPLETE	BACK BLINONG WP 1 BOR COMPLETE	BACK BLINDING WP COMPLETS																	
GOAL POSTS FWILPARE? SKINAGE	WEST PIER CLADONS	WEST PER CLASSING	PIER EXCAVATION BAST	PER EXCAVATION BAST			EXCAVATION WEST / SAST	TRIAL HOLE & PIER EXCANATION WEST	TRIAL HOLE & PIER EXCAVATION WEST																METALL JACKE & PACKE EP	COMPLETE PROPPING S JACK BP	
			PROPPING HEIGHTS						BP - BRBCT PROPPING DAY1	RP-ERECT PROPPING DAYS	PROPPING DATE & GROUT BASES			RP-BRECT PROPPING DAYA	RP - BRECT PROPPING DAYS & PRE ASSEMBLE HEADER	HEADER HEADER HEAMS						BRECT SCAPPOLD BOW SP & SHEET	PMS, SHEET & BOARD RP	SHEET & BOARD BP	FIRMAGIS BOARDING BP	FINISH BOARDING S HANDOVER EP	
			METHOD STATEMENT				REVESED RAME									INDUCTION & BRBCT BCAPPOLD BASE BP	BRBCT BCAPFOLD MAIN RP	BRECT BOAPPOLD MANUEP	BRACT SCAPPOLD MAN EP			MONITORING TELT DAY I	NONTORNO TELTORES	MONITORING TET DAYS	MONTORING TET DAY 4	NONTOKING STOP IND A COMMUNICH ING	
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Monday	Tuesday	Wednesday	Thursday	Friday	Seluciny	Sunday	Munday	Tuesday	Wednesday	Thursday	Priday	Saturday	Burnley	Monday	Toweday	Wednesday	Thursday	Philary	Saturday	Bunday	Monday	Tuesday	Wednesday	Thursday	Pitting	Security	Sunday
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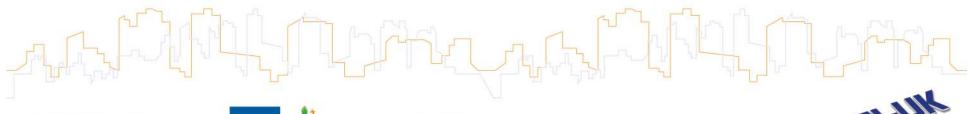




#### **Production Control**



- "What gets measured gets done"
- Weekly meeting to work together
- Manages relationships, conversations & commitments
- Monitors the team's performance on a daily basis & identify improvement opportunities















## **Production Control Meeting**



















#### Production Control Meeting Format

#### 1) Review Last Week

- Activities Complete
- Allocate Non Comp
- Move Post-Its on th

#### 2) Make Next Weeks Plan

D

- Do you have everyth start every activity?
- Are there clashes be

#### 3) Discuss 5-6 Week Lookahead

- Is everything in place for Ne Activities?

> Contracts Design

Plant / Materials

Resources

Safety Issues Add

#### 4) Review Issues / **Opportunities**

- Have previously raised Issues been Closed Out?
- If Not, Why Not?

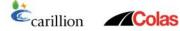










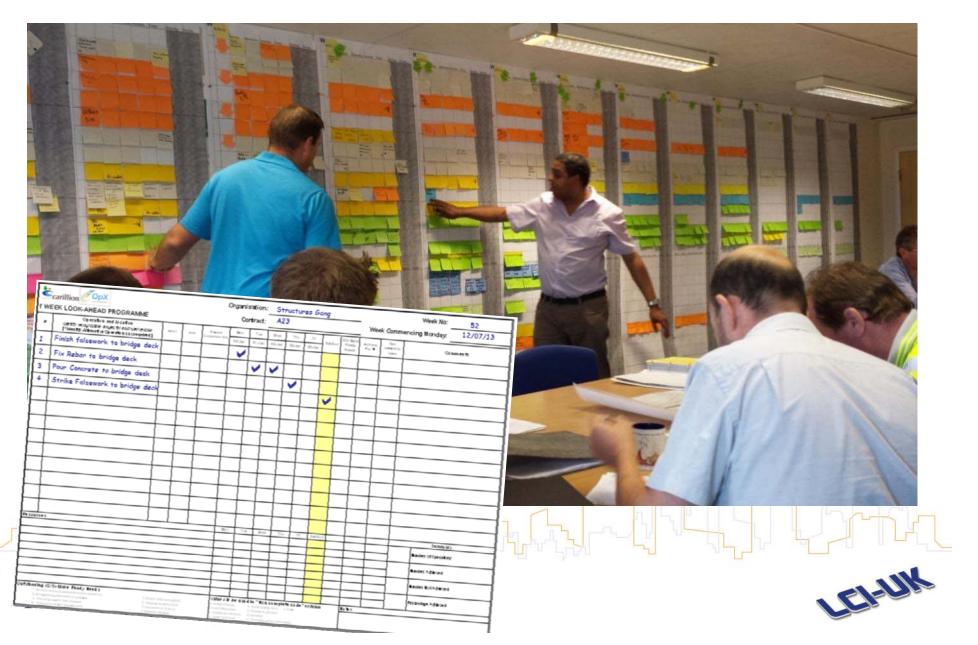






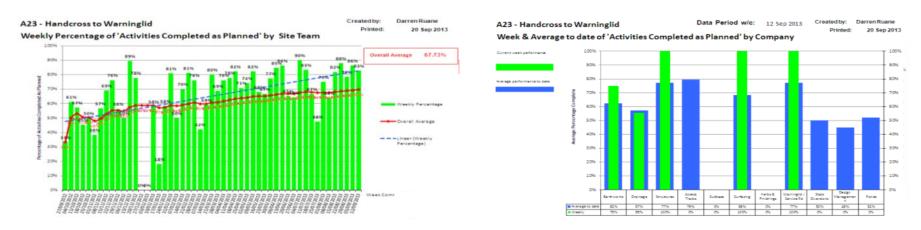




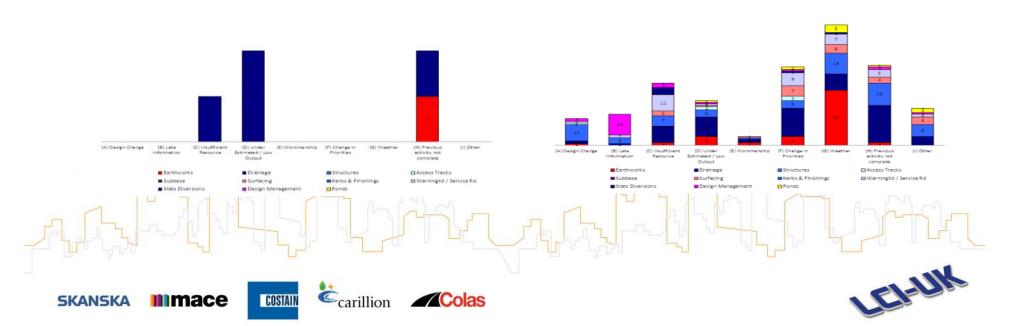




#### **Production Control Meeting Outputs**



#### "The things that get measured are the things that get done"



## Planned Percentage Complete



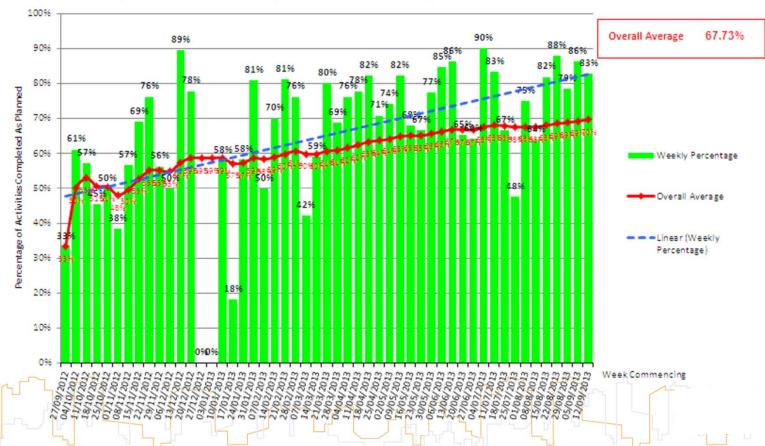
A23 - Handcross to Warninglid

Printed: 20 Sep 2013

Darren Ruane

Created by:

Weekly Percentage of 'Activities Completed as Planned' by Site Team















## **Reasons for Non Completion**

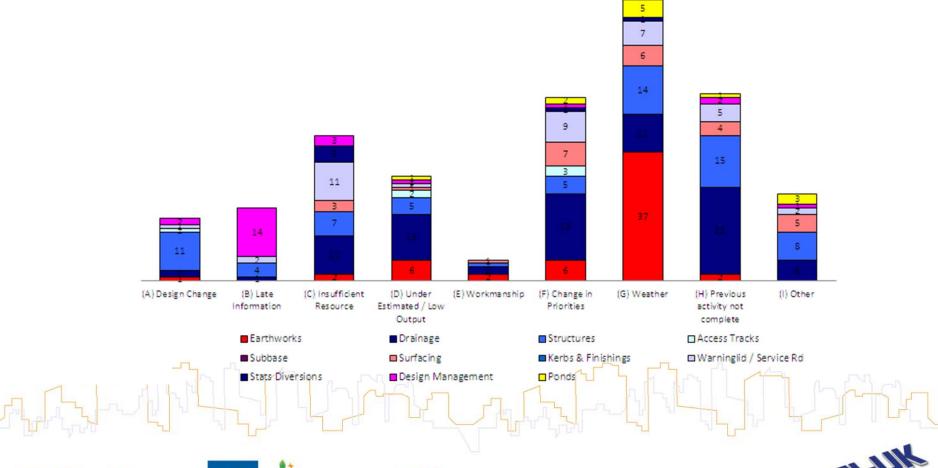


A23 - Handcross to Warninglid

Reasons for Activities Not Completed As Planned (To Date)

Created by: Darren Ruane

Printed: 20 Sep 2013















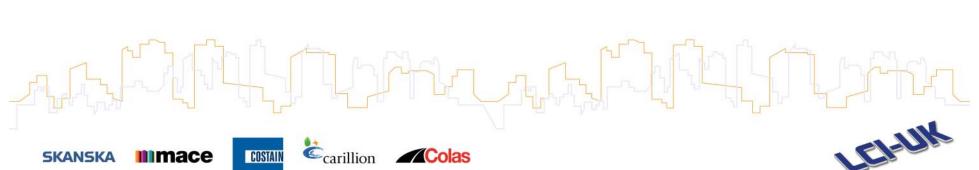
#### A View from the Client





Independent Review Score

107 out of 108















#### A View from the Company



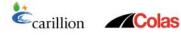
#### 31 Weeks Potential Programme Delay Mitigated















#### **A View from the Company**

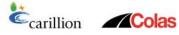
















#### Views from the Team



Last Planner meetings provide a much more interactive forum for debate and negotiation between conflicting activities and remove the potential for the all too often 'silo' mentality where - if its not my area then I don't need to worry about it approach

Collaborative Planning is a great example of 'What You Put In - You Get Out '

If I bring one thing from the A23 to my next job it will be Collaborative **Planning** 

The benefits I have seen from Collaborative Planning & Last Planner sessions are 'Changes in Priorities, Changes in Methodology & Better Understanding of other peoples problems'

There are real Benefits regularly gained from these meetings and their outputs















#### Implementation Success Factors

- Leadership Buy In This is imperative and can be achieved with attendance and participation in sessions
- Experienced Facilitation the Carillion OpX team can establish the system and train relevant staff members
- Can Do Attitude You just need a team who are willing to give something new a try









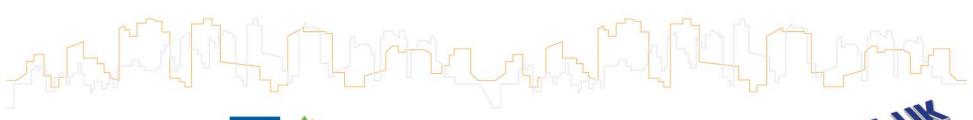






## Lean Projects on the A23

















## The Eight LEAN Wastes









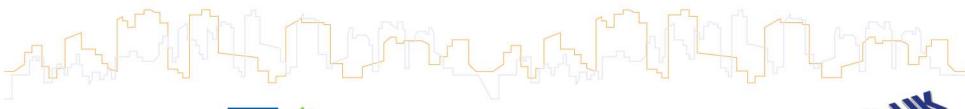


























#### Earthworks - Lean Project



#### **CASE STUDY**



Title:	A23 Earthworks Reviews	
Point of Contact:	Darren Ruane - 07717 430 277	
Customer:	Highways Agency	
Project:	A23	



P	roble	em Definiti	on	& Overview	/	2. lm	npa
-		1310/37 E. A. S. S. S. S.		ARREST CONTRACTOR IN	CALLED BUILDING	_	

The A23 Handcross to Warninglid project is a Highways Agency scheme with a project duration of over two years. The team have used Collaborative Planning and Last Planner techniques to manage the complex programme of traffic switches and a significant number of inter-related tasks and trades.

The Collaborative Planning sessions identified activities that had reasonably long durations and therefore impacted tasks around them and the overall programme. Certain Earthworks activities and the supply and removal of Earthworks materials was chosen for further review.

#### 3. Improvement Applied

Having embraced the Lean Tools of Collaborative Planning & Last Planner with the help of Carillion's OpX Team, the team decided to carry out Lean Reviews of these Earthworks activities.

Teams including Section Managers, Engineers, foreman, buyers, office managers and planners came together in these facilitated sessions to review the originally planned activities, brainstorm possible issues, propose alternative solutions, carry out cost vs benefit calculations on the new ideas and where possible implement any good ideas, that will reduce programme durations or save the project money.

#### acts

	Positive	Neutral	Negative
Safety		N	
Cost	0		
Time	0		
Quality		N	
Sustainability		N	
Culture	0/		

#### 4. Benefits to the Project & Customer

The Highways Agency Lean Division have mandated that all new HA projects should use the Collaborative Planning and Last Planner Lean tools as they have witnessed benefits on those projects that have used them and support all projects who attempt to reduce programme and costs through Lean initiatives.

Carillion Project Leader John McNiffe has seen significant benefits from Lean processes on the project with the communication and co-operation it has brought between the various parties and the money that it has saved the project.















#### **RC Structures - Lean Project**



#### CASE STUDY



Title:	A23 Structures Reviews
Point of Contact:	Darren Ruane - 07717 430 277
Customer:	Highways Agency
Project:	A23



4	Droblom	Definition	& Overview
	FIUDIEIII	Delillillilloll	a Overview

The A23 Handcross to Warninglid project is a Highways Agency scheme with a project duration of over two years. The team have used Collaborative Planning and Last Planner techniques to manage the complex programme of traffic switches and a significant number of inter-related tasks and trades.

The Collaborative Planning sessions identified certain tasks that had reasonably long durations and therefore impacted activities around them and the overall programme. Certain Structures activities were chosen for further review.

#### 3. Improvement Applied

Having embraced the Lean Tools of Collaborative Planning & Last Planner with the help of Carillion's OpX Team, the team decided to carry out Lean Reviews of these critical structures activities.

Teams including Section Managers, Engineers, foreman and planners came together in these facilitated sessions to review the originally planned activities, brainstorm possible issues, propose alternative solutions, carry out cost vs benefit calculations on the new ideas and where possible implement any good ideas, that will reduce programme durations or save the project money.

#### 2. Impacts

	Positive	Neutral	Negative
Safety		N	
Cost	0		
Time	0		
Quality		N	
Sustainability		N	
Culture	4		

#### 4. Benefits to the Project & Customer

The Highways Agency Lean Division have mandated that all new HA projects should use the Collaborative Planning and Last Planner Lean tools as they have witnessed benefits on those projects that have used them and support all projects who attempt to reduce programme and costs through Lean initiatives.

Carillion Project Leader John McNiffe has seen significant benefits from Lean processes on the project with the communication and co-operation it has brought between the various parties and the money that it has saved the project.



















#### **CASE STUDY**

1. Problem Definition & Overview

The A23 Handcross to Warninglid project is a Highways Agency scheme with a project duration of over two years. The team have used Collaborative Planning and Last Planner techniques to manage the complex programme of traffic switches and a significant number of inter-related

The Collaborative Planning sessions identified



Title:	A23 Joint Surfacing Review
Point of Contact:	Darren Ruane - 07717 430 277
Customer:	Highways Agency
Project:	A23



	certain tasks that had reasonably long durations and therefore impacted activities around them and the overall programme. Certain Structures activities were chosen for further review.
	3. Improvement Applied
2	A Joint Team from Carillion and Aggregate Industries including Section Managers, Engineers, Foremen, Planners, Technical Managers and Quantity Surveyors came together in facilitated sessions to review the activities. A Process Map of the handovers and survey requirements was jointly developed to ensure clarity of the upcoming element of work. The team brainstormed possible issues, proposed alternative solutions, carried out cost vs benefit calculations on the new ideas and where possible implemented any good ideas, that would reduce programme durations or save the project money.

tasks and trades.

	Positive	Neutral	Negative
Safety	0		
Cost	4		
Time	~		
Quality			
Sustainability		N	
Culture	01		

The Highways Agency Lean Division have a desire for Lean to be implemented across all levels of their supply chain, and this joint project is a good example of first and second tier suppliers working together collaboratively to attempt to reduce programme and costs through Lean initiatives, thereby saving the project and the client money.

Carillion Project Leader John McNiffe has seen significant benefits from Lean processes on the project with the communication and co-operation it has brought between the various parties and the money that it has saved the project.









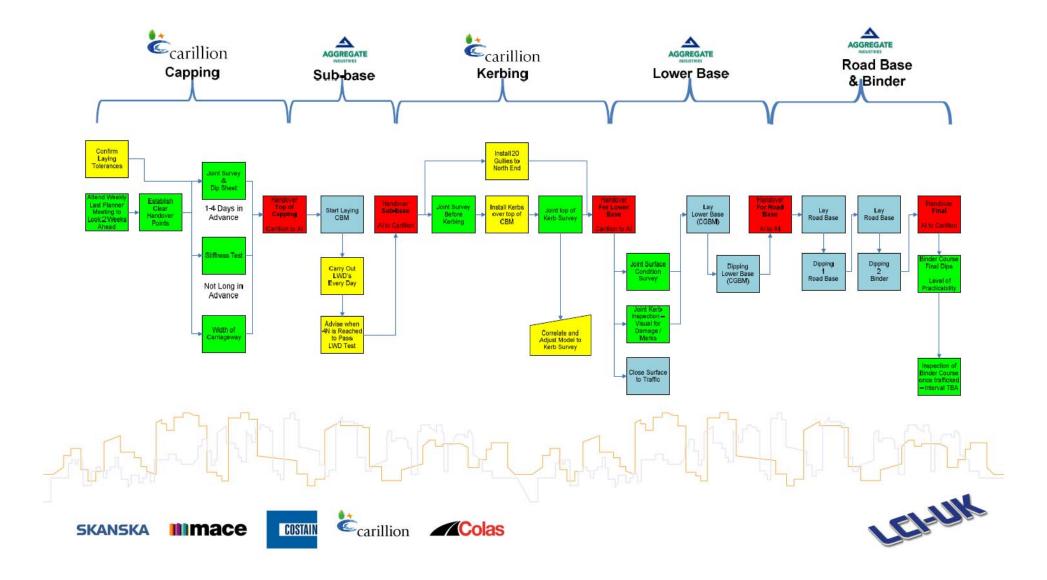




4. Benefits to the Project & Customer

## Lean Infrastructure Meeting the challenges of Construction 2025

#### **Surfacing - Lean Project**



## Meeting the challenges of Construction 2025

## **Surfacing - Lean Project**









